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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/805,080	03/19/2004	Warren E. Vann JR.	100200327-1	7912

22879 7590 10/04/2005

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FORT COLLINS, CO 80527-2400

EXAMINER

GARLAND, STEVEN R

ART UNIT	PAPER NUMBER
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2125

DATE MAILED: 10/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/805,080

Applicant(s)

VANN, WARREN E.

Examiner

Steven R. Garland

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 3/19/04, 8/26/04.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/19/04.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. Claims 1-22 are pending.
2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1,2,4,6,9,10,13-16, and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Blake 2003/0137267.

Blake 2003/0137267 teaches a cooling system for an electronic enclosure. The temperature is sensed at multiple points using thermal sensors ( 210,211) which can be diodes (paragraphs 0012,0049) mounted on an IC and which are coupled in parallel to the multiplexer 203 ; the temperature data is input on a single thermal data channel (203,202 ) and cooling devices (215,216, paragraph 0048) in the form of fans are controlled. Blake further teaches using the highest temperature to control the fans. paragraph 0071. See the abstract; figures; paragraphs 0001, 0010, 0012, 0020, 0021, 0029, 0048, 0049, 0071, and the claims.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3,8,11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blake 2003/0137267.

Blake 2003/0137267 teaches a cooling system for an electronic enclosure. The temperature is sensed at multiple points using thermal sensors ( 210,211) which can be diodes (paragraphs 0012,0049) mounted on an IC and which are coupled in parallel to the multiplexer 203 ; the temperature data is input on a single thermal data channel (203,202 ) and cooling devices (215,216, paragraph 0048) in the form of fans are controlled. Blake further teaches using the highest temperature to control the fans. 0071 See the abstract; figures; paragraphs 0001, 0010, 0012, 0020,0021,0029, 0048,0049,0071, and the claims.

Blake however does not expressly state that the cooling system is installed inside a computer enclosure, that the electronic components can be processors, or that the temperature of the warmest processor controls the fans. Blake however expressly teaches using the warmest component to control the fans in paragraph 0071.

It would have been obvious to one of ordinary skill in the art to use the system of Blake to control the temperature inside a computer enclosure having one or more processors so that the processors are maintained at proper operating temperature.

Further it view of the express teaching of Blake it would have been obvious to one of ordinary skill in the art to control the fans in response to the warmest processor to prevent overheating.

6. Claims 5,7,17, 19, and 20 rejected under 35 U.S.C. 103(a) as being unpatentable over Blake 2003/0137267 as applied to claims 1,2,4,6,9,10,13-16, and 18 above, and

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further in view of the article " Analog Devices --dBCOOL (tm) Remote Thermal Controller and Voltage Monitor ADM 1027 " (cited by applicant).

Blake 2003/0137267 teaches a cooling system for an electronic enclosure. The temperature is sensed at multiple points using thermal sensors ( 210,211) which can be diodes (paragraphs 0012,0049) mounted on an IC and which are coupled in parallel to the multiplexer 203 ; the temperature data is input on a single thermal data channel (203,202 ) and cooling devices (215,216, paragraph 0048) in the form of fans are controlled. Blake further teaches using the highest temperature to control the fans. 0071 See the abstract; figures; paragraphs 0001, 0010, 0012, 0020,0021,0029, 0048,0049,0071, and the claims.

Blake however does not expressly state that the sensors are the same, multiple fans are the same, or that transistors can be use to sense the temperature.

The article " Analog Devices --dBCOOL (tm) Remote Thermal Controller and Voltage Monitor ADM 1027 " (cited by applicant) teaches temperature sensing at multiple points and that the temperature sensors can be thermal diodes or transistors. See page 6, column 1 and also page 14. Note page 6, column 1, teaches the use of transistors ( note.plural ) such as 2N3906 which are clearly identical transistors.

It would have been obvious to one of ordinary skill in the art to modify Blake in view of the article and use the same type of sensors with the same kind of response (either transistors or diodes ) at multiple measurement points for ease in implementation and also to reduce the kinds of sensors.

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Further it would have been obvious to one of ordinary skill in the art to modify Blake in view of the article and use the same kind of fans with the same kind of response to ease implementation and also ease in replacement of defective components.

7. Claims 1-4,6,8-16,18, and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. 2004/0075981 in view of Blake 2003/0137267.

Kim et al. 2004/0075981 teaches a cooling configuration for a multiprocessor 12,13 computer system. Kim teaches that multiple fans are used, that each processor can have a fan ( paragraph 0027) and other fans may be provided 6,15. Kim also teaches providing a plurality of temperature sensors 51-54 located at various locations, that the sensors can be thermal diodes or other types of temperature sensors ( paragraph 0032), that the fans can be controlled in response to various temperature conditions such as average, maximum, etc. See the abstract; figures; paragraphs 0006-0009, 0022,0025, 0027,0028, 0029,0030,0032, and the claims.

Kim however does not go into details about how the control system is physically implemented.

Blake 2003/0137267 teaches a cooling system for an electronic enclosure. The temperature is sensed at multiple points using thermal sensors ( 210,211) which can be diodes (paragraphs 0012,0049) mounted on an IC and which are coupled in parallel to the multiplexer 203 ; the temperature data is input on a single thermal data channel (203,202 ) and cooling devices (215,216, paragraph 0048) in the form of fans are controlled. Blake further teaches using the highest temperature to control the fans. 0071

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See the abstract; figures; paragraphs 0001, 0010, 0012, 0020,0021,0029, 0048,0049,0071, and the claims.

It would have been obvious to one of ordinary skill in the art to modify Kim in view of Blake to use such a control system having multiple sensors connected to a single thermal channel to control the speed of one or more fans.

Further it would have been obvious to one of ordinary skill in the art to modify Kim and Blake and provide a redundant sensor input from duplicate sensors on a second thermal channel in case of sensor or thermal channel failure.

8. Claims 5,7,17, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. 2004/0075981 in view of Blake 2003/0137267 as applied to claims 1-4,6,8-16,18, and 21-22 above, and further in view of the article " Analog Devices --dBCOOL (tm) Remote Thermal Controller and Voltage Monitor ADM 1027 " (cited by applicant).

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See page 6, column 1 and also page 14. Note page 6, column 1, teaches the use of transistors ( note plural ) such as 2N3906 which are clearly identical transistors.

It would have been obvious to one of ordinary skill in the art to modify Kim and Blake in view of the article and use the same type of sensors with the same kind of response (either transistors or diodes ) at multiple measurement points for ease in implementation and also to reduce the kinds of sensors.

Further it would have been obvious to one of ordinary skill in the art to modify Kim and Blake in view of the article and use the same kind of fans with the same kind of response to ease implementation and also replacement of defective components.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Matsuo 5,255,149 teaches the use of identical temperature sensors. See col. 3, lines 43-53. Harvey 5,102,040 teaches connecting temperature sensors in parallel . See figure 2 and col. 2, lines 21-60.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven R. Garland whose telephone number is 571-272-3741. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on 571-272-3749. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Sn C*

Steven R Garland  
Examiner  
Art Unit 2125

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*Albert W. Paladini 10-2-05*  
**ALBERT W. PALADINI**  
**PRIMARY EXAMINER**